IV. The Range of Options for Development of Digital Radio will be Limited by Authorization of An LPFM Service

In the NPRM, the Commission also acknowledges that the impact of authorizing a low power FM service, and, in particular, eliminating second and third adjacent channel protection standards, on the development of In-Band On-Channel ("IBOC") digital audio radio ("DAR") must be assessed.[40] More particularly, the Commission stated:

> [w]e are concerned that our understanding of future IBOC systems is preliminary and that we may not be fully aware of any negative impact or restrictions that authorization of low power radio service would have on the transition to a digital IBOC technology for FM stations. Clearly, we need to better understand the potential impact of second-adjacent channel LPFM protection standards on the successful development of an IBOC system.[41]

The implementation of DAR technology will further the public interest by enabling the public to enjoy sound quality on FM radio that is comparable to compact discs, and a sound quality on AM radio that is comparable to existing FM radio transmissions, with enhanced signal robustness, improved signal reception at the outer perimeters of a station's coverage area, and by eliminating or reducing "drop outs" of coverage.[42]

Preliminary evidence based on research and development conducted to this point suggests that the authorization of LPFM stations may jeopardize the implementation of IBOC. In the recently-released Notice of Proposed Rule Making regarding digital audio broadcasting

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[40]NPRM at para. 1-2.

[41]NPRM at 21.

[42]Comments of CBS Corporation, RM-9395 at p. 4.

systems, the Commission continued to recognize the necessity for considering the implications of LPFM service on DAR, and seeks "comment on the compatibility of IBOC systems and the proposed LPFM service."[43] IBOC technology has been in development for several years, and the existing channel allocation criteria have been utilized as the basis for the development of this technology. Revisions to the allocation criteria at this point could adversely impact the continued development and future viability of IBOC DAR. As USA Digital Radio, Inc. ("USADR") explains in its Comments in this proceeding: "[e]liminating the requirement that LPFM stations comply with existing second adjacent channel interference protections will create new and more significant instances of interference for DAB. This will increase the number of instances that listeners will lose digital audio program service."[44] Field testing of IBOC DAR is just beginning in several cities. However, because field testing is in the early stages, the proponents of IBOC DAR have not yet had the opportunity to compile and analyze the results of these field tests, and the precise impact of the proposed LPFM authorizations is not known. As USADR explains, "[u]ntil there is actual implementation of DAB in the field, it is not possible to determine the potential for interference."[45] As noted above, the Commission itself acknowledges that the impact on IBOC DAR of a lessening of the second adjacent channel protections currently in place is not known, and must be better understood. Therefore, in the event the Commission

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[43]*Notice of Proposed Rule Making: In the Matter of Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, FCC 99-327, MM Docket No. 99-325 at p. 12 (released November 1, 1999).

[44]USADR Comments at 6.

[45]*Id.* at 7.

decides to proceed with the LPFM proposal, at a minimum, it should defer further consideration of the proposal until comprehensive IBOC field tests have been completed, comments and reply comments in the DAB NPRM have been filed and reviewed, and the overall impact of LPFM on DAR has been comprehensively analyzed.

V. The Authorization of Low Power FM Stations Would Constitute An Adverse Modification Of The Licenses Held By Certain Existing Stations, And Would Therefore Require a Hearing.

Section 316(a)(1) of the Communications Act of 1934, as amended, (the "*Act*") provides that no order of modification of an existing license will become final until the holder of the license or permit has been notified in writing of the proposed action and the grounds and reasons therefor, and given reasonable opportunity, of at least thirty days, to protest such proposed order of modification.[46]

The Commission and the courts have consistently acknowledged that the grant of a new authorization that would create interference to existing stations provides sufficient grounds to afford the adversely affected licensee a full evidentiary hearing. In *Pike-Mo Broadcasting Co.*[47], for example, after the Commission revoked the license of an existing AM broadcaster in St. Louis, it considered whether a consortium of some of the applicants competing for a permanent authorization for the vacated channel should be permitted to continue to operate the station on an interim basis pending the award of the permit. The Commission held that authority

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[46]Communications Act of 1934, §316(a)(1), as amended.

[47]*Pike-Mo Broadcast Co.*, 2 FCC 2d 207 (1965) at para. 5.

for interim operation could be granted without the evidentiary hearing required under §316 of the Act because existing licensees would not be subject to any new interference from such interim operation. The Commission found that interim operation at the same power and on the same frequency as the vacating station would do no more than maintain the status quo, and as such would not constitute "new" interference. However, the Commission observed that "a different situation would be presented if a grant of an interim authorization would, for the first time, create interference to existing stations. In that situation some persons accustomed to receiving service from the existing stations would either be deprived of such service or would receive substituted service from the station granted an interim authority, thus raising at the outset important public interest considerations."[48]

In a subsequent case, the Commission stated that "where a substantial question of new or increased interference has been raised, the addition of hearing issues is warranted."[49] In *Application of WKLX, Inc.*, the Commission explained that "[d]isruption of service created as the result of the transmission of undesired signals, where not dependent upon receiver characteristics, may create a Section 316 right if uncorrected."[50] Indeed, in its Memorandum Opinion and Order regarding the 1998 Biennial Regulatory Review released on October 6, 1999, the Commission stated that "[a]lthough a broadcast permit or license does not confer a property right on its holder, procedural due process rights inherent in the APA attach when the

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[48] *Id.* See also *Beloit Broadcasters, Inc.*, 365 F.2d 962, 964 (1966).

[49] *In re Applications of Great River Broadcasting, Inc.*, 11 FCC 2d 885, 886 (1968).

[50] 6 FCC Rcd 225 at para. 10 (1991).

Commission changes the terms or conditions of a permit or license."[51]

In the NPRM, the Commission proposes to relax the second and third adjacent channel spacing requirements which protect existing FM stations from interference and overcrowding. Technical studies submitted by the NAB and other parties in this proceeding indicate that the operation of LPFM stations will result in new interference to certain existing stations which will prevent these stations from serving certain areas they now serve; therefore, the authorization of low power FM stations will result in the modification of these stations' licenses. Accordingly, before any low power FM station is authorized, an existing FM station whose license will be adversely modified due to new interference from the operation of an LPFM station must be afforded prior notice and the opportunity for a full evidentiary hearing under Section 316 of the Communications Act to determine if the public interest would be served by such modification.

VI. If Any Low Power FM Service Is Authorized, Second-Adjacent Channel Interference Protection Should Not Be Relaxed, And LPFM Stations Should Be Secondary and Required To Comply With Translator Rules.

As explained in the Appendix to the Engineering Statement, in large markets such as New York, Los Angeles and Chicago, the Commission's proposal to eliminate second and third adjacent channel spacing requirements could theoretically result in the addition of more than one hundred LP100 stations. As explained in the Engineering Statement, the cumulative impact of the potential addition of such a large number of signals will substantially erode the level of service provided by existing stations. For this reason, Infinity submits that if, despite

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[51] *Memorandum Opinion and Order, In the Matter of 1998 Biennial Regulatory Review - Streamlining of Mass Media Applications, Rules, and Processes*, MM Docket No. 98-43 at footnote 38 (released October 6, 1999).

inconsistencies with decades-long precedent and the significant impairment to service provided by existing licensees, the FCC nonetheless proceeds with a proposal to authorize any LPFM stations, to mitigate the potentially devastating impact of the addition of so many stations, the FCC should not under any circumstances relax second-adjacent channel protection requirements. Further, consistent with the Commission's conclusions several years ago when it revised certain of its rules applicable to the FM Translator service, all LPFM stations should be secondary and comply with the rules that currently apply to FM translators.[52]

In its 1970 Report and Order authorizing the establishment of FM translator service, the Commission stated that its purpose was to "provide FM radio service to areas and populations which are unable to receive satisfactory service by reason of distance or intervening terrain obstructions" and authorized FM translators subject to the condition that they not cause interference to the public's reception of the signals of any other authorized station.[53]

Less than 10 years ago, in 1990, when the Commission amended the FM translator rules, it highlighted the need to protect the existing FM band. When explaining its determination that the sole purpose of low power FM translator stations was to provide service in areas where direct reception of radio service is currently unsatisfactory and that such low power stations should continue to be authorized on a secondary basis only, the Commission stated "[w]e continue to believe that the most appropriate and efficient means of providing additional FM service nationwide is by creating opportunities for the establishment and development of full

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[52]*See* Engineering Statement at 8.

[53]*Report and Order, Amendment of Part 74 of the Commission's Rules and Regulations to Permit the Operation of Low Power FM Broadcast Translator and Booster Stations*, FCC 70-1042, Docket No. 17159 at para. 2-3 (released Sept. 29, 1970).

service broadcast stations."[54]

In the NPRM, the Commission proposes to eliminate the adjacent channel interference protections currently in place in order to authorize a significant number of 1000-watt LPFM stations that would operate on a primary basis. Such a proposal is inconsistent with the reasoning applied by the Commission in previous rule makings, including the FM translator rule making discussed above. If LPFM service is to be authorized, it should, consistent with the FM translator proceedings, be authorized only to provide service to areas and populations that are currently unable to receive satisfactory FM signals due to distance or intervening terrain obstructions, and such service should be authorized on a secondary basis, with rules in place that prevent interference to currently licensed full-power FM stations.

VII. Conclusion

Although the Commission recognizes that "ensuring the effective and efficient use of the spectrum is one of [its] fundamental responsibilities,"[55] it has not yet carefully analyzed the full impact of the interference that will ensue if second and third adjacent channel protections are relaxed in order to implement the LPFM service it has proposed. The Commission's proposal to eradicate almost 40 years of effective, bedrock protection of the technical integrity of the FM band in one fell swoop by eliminating second and third adjacent channel protections has the potential to degrade, on a widespread basis, the service provided by existing full power FM stations, and could lead to impairment of the FM service similar to what has befallen the AM

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[54]*Report and Order, Amendment of Part 74 of the FM Commission's Rules Concerning Translator Stations*, 5 FCC Rcd 25 at paras. 5 and 22 (released Dec. 4, 1990).

[55]NPRM at para. 21.

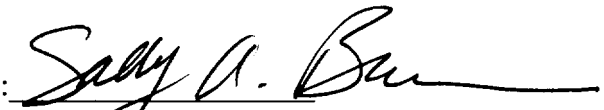
band.

Existing FM stations extensively and conscientiously address the needs of the communities which they serve, and provide a large range of programming that appeals to diverse segments of the population. Local radio stations function as a key source of local news, information, public affairs programming, public service announcements, and Emergency Alert System broadcasts. LPFM stations will potentially interfere with the ability of existing FM stations to continue to provide such valuable services to the communities which they are licensed, creating "Swiss cheese-like" pockets of interference where existing service will drop out due to LPFM interference. Further, LPFM could significantly impair the industry's ability to develop and implement digital radio.

For the foregoing reasons, Infinity respectfully submits that LPFM is not the appropriate means to achieve the laudable goals the Commission set forth in this proceeding.

Respectfully submitted,

INFINITY BROADCASTING CORPORATION

By: 

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Bernard R. Segal, P.E.
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ENGINEERING STATEMENT
PREPARED ON BEHALF OF
INFINITY BROADCASTING CORPORATION
NEW YORK, NEW YORK

Infinity Broadcasting Corporation, and its affiliates, are the licensees of numerous FM stations throughout the United States. Infinity has engaged the undersigned to prepare this Engineering Statement which is in support of Reply Comments to the FCC's Notice of Proposed Rulemaking in MM Docket No. 99-25 relating to the creation of a low power FM (LPFM) radio service.

The FCC proposal, which was adopted January 28, 1999, and released February 3, 1999, seeks to establish rules for three classes of new LPFM radio stations—a 1000 watt/60 meter primary status; a 100 watt/30 meter secondary status and a microradio class of secondary services operating within a power range of one to ten watts. The Notice of Proposed Rulemaking was issued in response to two petitions requesting the establishment of new low power FM facilities. The following comments address the technical aspects of the FCC's Notice.

CBS opposes that provision of the FCC's proposal relating to the establishment of primary, secondary and microradio facilities which do not adhere to the current interference standards, particularly those that relate to second and third adjacent channel interference. The FCC has not provided adequate evidence for concluding that such interference protection is no longer required. As explained below, a comprehensive analysis of radio receiver performance, commissioned by the National Association of Broadcasters (NAB)*, demonstrates that for many types of radio receivers that are manufactured and sold, second and third adjacent channel protection remains necessary.

The NAB commissioned study was performed in a proper scientific manner using a sampling of 28 modern FM receivers divided into five categories: 5 clock; 5 Walkman type; 5 portable; 5 component; and 8 automobile. Six of the

* The Study has been submitted as part of the comments by the NAB in this proceeding. A report entitled, "Second and Third Adjacent Channel Interference Study of FM Broadcast Receivers," authored by William H. Inglis and David L. Means of the FCC's Technical Research Branch Laboratory Division, Office of Engineering and Technology, and included in the record, did not include in the sample of receivers studied the small, inexpensive receivers with integral antennas. These are the receivers that were determined in the NAB study to be most susceptible to 2nd and 3rd adjacent channel interference.

28 receivers were monaural only. The results of the tests are presented in both tabular and graphic forms.

Each receiver was tested at three desired signal input levels for a signal/noise (s/n) degradation of 5 dB by undesired signals at different channel offsets. The 5 dB s/n ratio degradation had been established as representing a significant reduction in audio performance by the consulting firm of Moffett, Larson, & Johnson, P.C. under a separate contract to the NAB.

The compiled results demonstrate that the Walkman type, portable, and clock radios do not perform as well as the car and component radios, on average, insofar as interference rejection is concerned. The conclusions that may be drawn from the report are: 1) Second and third adjacent channel interference concerns are valid for the Walkman type, portable and clock radios; 2) Even though car radios generally perform better than the other types of receivers, their mobile operating environment leaves them vulnerable to wide variations in both desired and undesired signal strength levels so the enhanced performance serves to minimize the deleterious effects from the excessive D/U signal swings; 3) Greater protection is required for second and third adjacent

channel separations for the stronger desired signal levels (-45 and -55 dBm) than for the weaker (-65 dBm) signal level.

The NAB commissioned report supports the need for retention of second and third adjacent channel interference protection. The FCC's proposal to eliminate second and third adjacent channel protection for FM allocations undermines the overall basis of the distance separation based FM allocations scheme which the FCC implemented in 1962 and has zealously protected since then.

In 1961, the FCC released its Notice of Inquiry, Notice of Proposed Rulemaking, and Memorandum Opinion and Order in Docket No. 14185 in the matter of Revision of FM Broadcast Rules, Particularly as to Allocation and Technical Standards--the rulemaking that lead to the adoption of an FM Table of Allotments and fixed distance separations for cochannel, and first, second and third adjacent channel stations. In this proceeding the FCC stated:

"Effect of individual consideration of applications on overall service: In FM, as in the standard broadcast service, proposed assignments of new or increased facilities are considered individually, except where two or more applications are mutually exclusive. Each proposal is evaluated on the basis of whether it would cause interference to existing stations, and, if so, to what extent. Whatever the merits of this approach, it has one obvious disadvantage--it does not permit evaluation of the total effect of a series of authorizations upon an existing station or existing over-all service. In other words, a single application before the Commission may involve some small amount of interference to an existing station, but not enough to justify denial of the application on this ground; but the total effect upon the service of the existing station from a series of such grants may be significant.[7] Under this approach, the AM spectrum has become crowded, and

[7] "This problem is especially related to second and third adjacent-channel interference. Because the extent of such interference is small, occurring in an area immediately around the interfering station's transmitter, the gain from one such grant generally outweighs the loss, population-wise. But the effect of a series of such authorizations on the existing station's service may be more significant."

probably over-crowded, and while this situation does not prevail in FM as yet, there appears a possibility that it soon will in some areas. Like the matter of efficiency mentioned above, this possibility appears to indicate the desirability of an over-all plan instead of case-to-case considerations of individual applications."

The laws of physics concerning radio signal propagation are the same today as they were in 1961. Every time a source of noise (interference) is added to the spectrum, it diminishes the useful range of coverage of another station. The addition of a multiplicity of such interfering sources can have a large cumulative effect even though each source, by itself, may produce little interference.

This would be particularly true with the addition of a myriad of 100 watt and lower powered stations since, by virtue of their limited coverage range, these stations must be located in the hearts of the communities proposed to be served in order to reach the intended target audiences. These stations would create interference close to their transmitters which would likely be located in the densely populated areas of these communities. Even though these

stations would be located beyond the defined protected contours of the primary stations, these communities are likely currently receiving service from primary stations. That coverage would be removed and the cumulative impact of many such low power stations could mean a substantial loss of actual service for an existing station.

In the earliest days of FM, the FCC considered useful rural reception to the extent of the 50 uV/m field strength contour. Well designed radios, particularly automobile radios could and do provide useful reception in such low signal strength level areas and in even lower signal strength areas in the absence of interference. Although the current allotment table is designed to afford protection from interference to the extent of the 1 mV/m, 0.7 mV/m or 0.5 mV/m signal strength level, depending on the particular station class that is being considered, useful service is provided by stations beyond the extent of the so called "protected" service area where no interference occurs.

Under current rules, no interference is deemed to occur unless the offending station creates a problem within the "protected" contour as defined in the Commission's rules. As stated earlier, in reality, in directions where there

is no offending station, useful reception can occur, and often does occur, well beyond the defined protected contour. The FCC recognized the importance of this service beyond the defined protected contour by requiring secondary stations, i.e. boosters and translators, to rectify interference to any authorized broadcast station including TV channel 6 stations, Class D (secondary) noncommercial educational FM stations, and previously authorized and operating FM translators and FM boosters regardless of the quality of such reception, the strength of the signal so used, or the channel on which the protected signal is transmitted. (See Section 74.1203 of the FCC Rules.). If the interference cannot be rectified, the secondary service provider will not be permitted to continue to operate.

If the FCC excuses the proposed new secondary class of LPFM stations from adhering to the same standards that are already in place for other secondary service stations, then it will set the stage for significantly diminishing the actual service provided by existing stations. The FCC's wisdom in 1961 of recognizing the cumulative effect of second and third adjacent channel interference should not be abandoned in considering the adoption of a new LPFM radio service. In many respects, these proposed stations would be the

functional equivalents of translators, and the same service and interference criteria that apply to translators should apply to LPFM stations.

If the FCC eliminated second and third adjacent channel protections to implement LPFM service, as proposed, one of the greatest potentials for harm would occur in those communities that are outside the defined protected signal strength contour and that are now served by existing stations. In other words, the new LPFM facility will destroy service that existing stations now provide. For many decades the Commission has steadfastly refused to waive its spacing rules at the allotment stage on the grounds that doing so would create additional interference in areas receiving interference-free service. If the LPFM proposal is adopted, it would be directly contrary to the FCC's longstanding commitment to preserving the technical integrity of the FM service. Although the addition of a multiplicity of new interfering signals would result in some new service, the price would be existing service losses in many areas.

Moreover, in instances in which LPFM stations would be permitted to locate within an existing station's protected contour because of the elimination of second and third adjacent channel spacing requirements, many more

receivers (listeners) will be subject to interference than for LPFM's located beyond the protected contours of existing stations. The NAB commissioned study demonstrates that many receivers require a greater D/U ratio for the avoidance of interference for stronger desired signals than for weaker desired signals. Clearly, therefore, the FCC's proposal to ignore second and third adjacent channel spacing requirements would result in inefficient use of the spectrum due to increased interference. For this reason alone, the proposal is directly at odds with numerous decisions issued by the FCC for the past 30 plus years in which the FCC has refused to adopt rule changes or individual waivers that would result in inefficient spectrum use.

The accompanying Appendix contains an analysis for a possible scenario for New York City, but which would be applicable, also, to other major communities such as Chicago, Los Angeles and others. If enough allocation rules are eliminated, the electromagnetic interference chaos that resulted before the establishment of the Federal radio Commission; the predecessor to the FCC, could be revisited.

In arguing for relaxation of second and third adjacent channel spacing requirements, one of the LPFM petitioners relies on the Commission's decision many years ago, which was reaffirmed a few years ago, to permit a certain category of grandfathered short spaced stations to ignore second and third adjacent channel stations. This petitioner claims that this decision demonstrates that satisfactory operation can occur if second and third adjacent channel interference concerns are ignored. However, this rationale is flawed.

In those instances where the FCC permitted second and third adjacent channel interference concerns to be ignored, the stations were already in operation and were already short-spaced. These stations, therefore, were already receiving and causing interference from and to second and third adjacent channel stations. Coincident with the so-called "short spacing" that was sanctioned, power increases were permitted which, to a large extent, served to reduce or maintain the scope of already existing interference. In other words, the permitted power increases served to increase the desired-to-undesired signal strength ratios, or to maintain the ratios and consequently, reduce or maintain

the existing extent of interference**. That scenario is in marked contrast to the current proposal which will allow for the creation of new interference where none now exists.

In summary, the proposal to create a new LPFM service is premised on a false notion that advances in receiver technology have eliminated a need for retaining second and third adjacent channel allocation spacing requirements. The evidence, supported by measurements made on a reasonable sampling of receivers of different design configurations, clearly supports retention of the spacing requirements. If LPFM stations are permitted to operate in the manner proposed in the NPRM, interference will be caused in many instances in areas currently receiving service, and the cumulative effect of this interference will result in a substantially less efficient use of the spectrum than is the case under current rules.

**In the NPRM, the FCC in paragraph 46 stated with regard to grandfathered second and third adjacent channel short-spaced stations that were permitted to increase service, "we did not receive any interference complaints as a result of such modifications." The probable reason is that the public was already accustomed to the interference and no noticeable changes occurred with the mutual power increases that were permitted.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 31, 1999.

Bernard R. Segal, P.E.

Bernard R. Segal, P.E.

APPENDIX

Analysis of Prospective Number of LPFM Stations That might Be Authorized in the New York City Area When Second and Third Adjacent Channel Separation Requirements are Ignored and LPFM Stations are Permitted to Receive Co and Adjacent Channel Interference

Assumptions employed:

1) Second and third adjacent channel separation requirements are ignored for LPFM stations with respect to full service FM stations.

2) LPFM stations can receive from, but not cause interference to full service and other LPFM stations.

3) Existing grand-fathered short-spaced full service second and third adjacent channel stations are ignored only to simplify this analysis.

In New York City (and in other major cities such as Chicago, Los Angeles and others), the commercial portion of the FM band has a Class B station assignment on just about every fourth channel from Channel 222 to Channel 298 with the transmitter locations clustered together. In New York, the Empire State Building is the site used by most of the stations. An exception would be Ch. 234B on which station WFME, Newark, operates. (In Chicago, the Sears Tower and the John Hancock Buildings, which are located close to one another, are the sites for virtually all the stations in that area. In Los Angeles, Mt. Wilson is the site for most of the area's commercial stations.)

By ignoring second and third adjacent channel short-spacings, it would be possible to interleave a new, LP100, or microradio FM facility two channels removed from each existing Class B station with the LPFM station co-located with the second adjacent Class B stations.

The present separation requirement for an existing Class B station to a Class A station which is two channels removed is 69 kilometers. The FCC proposal contemplates a cochannel separation of 47 kilometers for an LP100 station that is cochannel to a Class A station to avoid causing interference to the Class A station. A separation of 92 kilometers is needed to avoid interference to the LP100 station from the cochannel Class A station.

However the FCC has indicated that in order to allow for a significant number of LPFM stations, it would consider elimination of second and third adjacent channel interference considerations (see paragraph 46) for this class of station. This writer's understanding is that elimination of second and third adjacent channel interference would apply across the board as between full service and LPFM stations and as between two LPFM stations. The 92 kilometer cochannel separation requirement for the avoidance of received interference by an LP100 station from a Class A (or the specified distance for any other class) station would preclude use of the second adjacent channel, but if the FCC concludes that LPFM stations can receive, but not cause, interference even if it is cochannel, then the opportunity for adding a plethora of LPFM stations is materially enhanced.

For the case under consideration where an LP100 station must be at least 47 km from a cochannel Class A station and the Class A station meets the constraint of being 71 kilometers (a bit more than the 69 kilometers required minimum) from a second adjacent channel Class B station, the necessary conditions for adding a multiplicity of LP100 stations within the protected contours of the two straddling full service Class B stations are present.

The cochannel LP100/LP100 separation constraint is 24 kilometers. Thus, in addition to the LP100 station that is collocated with the Class B stations, there could be a number of surrounding LP100 stations at the perimeter of a circle with a 24 kilometer radius.* The whole number that could be accommodated is six. If the limiting cochannel Class A or other class station(s) are at greater distances than those just barely needed to comply with the minimum requirement, even more stations could be accommodated.

The foregoing addition of seven LP100 stations on one channel could be multiplied approximately nineteen times in New York alone for a total of 133** stations. If the proposed microradio stations were added to the mix, the number of stations causing interference would be tremendously greater.

The FCC premise is that little or no interference is involved if second and third adjacent channel separation constraints are ignored, but the NAB commissioned study demonstrates that a large class of receivers is susceptible to such interference. The cumulative effect on an existing station of the newly created interference by the multitude of LPFM stations that would be added, would be considerable.

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* If the FCC ultimately sanctions interference acceptance agreements, which has been proposed, even more stations could be packed in.

** This figure would be reduced in practice because existing grandfathered second and third adjacent short-spaced stations would preclude the maximum number of stations from being implemented. Nevertheless, the opportunity for adding a large number of stations would be present.

A REVIEW OF THE COMMISSION'S COMMITMENT TO THE PRESERVATION OF ITS FM ALLOCATIONS SCHEME

For almost forty years, the Commission has zealously and consistently acted to preserve the integrity of the allocations scheme for the FM broadcast service implemented in 1964, which is based on mileage separation requirements. In an unbroken line of decisions released since that time -- both in broad-based rulemaking proceedings and in cases involving waiver requests from individual stations -- the Commission has steadfastly defended and reinforced its policy of protecting the FM band from erosion and maintaining its technical integrity.

In a notice of proposed rulemaking released February 3, 1999, the Commission has proposed to create three new classes of low power FM stations -- FM 1000, FM 100 and FM 10.[1] In the NPRM, the Commission, on the one hand, acknowledges the importance of protecting the integrity of the FM spectrum,[2] but, on the other hand, observes that in order to make available sufficient spectrum for the creation of low power FM stations, particularly in larger markets, it would be necessary to eliminate second and third-adjacent-channel mileage protection for existing stations.[3] Such protection is a key component of the Commission's FM mileage separation scheme and its elimination would be directly counter to decades of consistent and effective Commission policy.

I. The Creation of The FM Allocations System Based on Mileage Separations.

When the mileage separation allotment system was proposed, the Commission believed that major changes to the FM rules and technical standards were necessary in order to ensure the optimal development of the FM broadcast service.[4] The Commission viewed minimum co-channel and adjacent-channel mileage separation requirements and the creation of an FM Table of Assignments as a blueprint for achieving the maximum potential for the FM service. The Commission rejected the use of an allocation scheme based on contour protection as is used for the AM service, concluding that it was inherently inefficient from an engineering perspective and would fail to promote its long-term objectives for the FM service of providing

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1 Cre*ation of a Low Power Radio Service, Notice of Proposed Rulemaking,* MM Docket No. 99-25 (released February 3, 1999) ("NPRM").

2 *Id.* at 2.

3 *Id.* at 19-20.

4 *Revision of FM Broadcast Rules, Particularly As To Allocation and Technical Standards*, First Report and Order, 1962 FCC Lexis 55, at *2. *("FM Allocations Order").*

strong, interference-free signals over large distances.[5] The Commission explained that the mileage-based allotment system afforded "the best basis for orderly, efficient, and effective development of the FM broadcast service."[6] That remains the case today, and its success is reflected in the contrast between the widely acknowledged inferior quality of AM service and the superior quality of the FM band.

In implementing the mileage separation system for FM allotments, the Commission made the deliberate decision to structure the FM band as a system geared towards full-powered, wide-reaching stations, explaining that it was "[d]eparting from past practice in the AM service," and "set[ting] aside 75% of all commercial FM channels for stations which will be able to provide interference-free service over relatively wide areas and [adopting] mileage separations which will allow a large proportion of these stations to achieve maximum facilities."[7] The Commission did not envision the FM band as a vehicle for placing local stations in every small community. "We have concluded that the factors set forth above outweigh the benefits which would be derived from an FM system having a substantially greater number of stations with more limited service areas."[8]

II. The Commission Has Diligently and Consistently Protected The Sanctity of The FM Mileage Separation Allotment System for Almost Forty Years.

Over the years, the Commission has diligently protected the sanctity of the FM allocations system. In fact, the Commission has consistently refused to waive the minimum mileage separation requirements at the allotment stage,[9] and, as detailed below, case-by-case waivers for individual stations have been granted quite sparingly, and only when special circumstances existed.

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5 *Revision of FM Broadcast Rules, Particularly As To Allocation and Technical Standards*, Third Report, Memorandum Opinion and Order, 1963 FCC Lexis 48, at *9-12 *("FM Allocations MO&O")*.

6 *FM Allocations Order*, 1962 FCC Lexis 55, at *31.

7 *FM Allocations MO&O*, 1963 FCC Lexis 48, at *22.

8 *Id.* at *24.

9 *E.g., Millington, Maryland*, 45 RR 2d 1689, 1690 (Brdcst. Bur., 1989).

At the time it adopted Docket 80-90, which resulted in the addition of scores of new FM stations to the FM table of allotments, the Commission again emphasized the importance of the mileage-based FM allocations system, but decided, *inter alia*, to amend its rules to create new classes of FM stations and reclassify certain stations operating without maximum facilities.[10] Significantly, the rule changes provided for "guardband" protection on second and third-adjacent-channels.[11] The Commission also decided against changing the minimum separation requirements to represent a uniform 1 mV/m protected service contour because the change would have reduced the primary service area of certain existing stations. The Commission explained that it did not "consider the incremental increase in availability [for new stations] to justify the loss of existing primary service areas. . . .[B]alancing the total number of potential stations against the potential service rendered, we cannot justify reducing a station's expected service area at this time."[12]

At the time it implemented the FM mileage separation scheme in 1964, certain stations that did not meet the adopted mileage separation criteria were already operating. These stations were grandfathered. However, because they were "short-spaced" to certain channel allotments adopted by the Commission, their ability to modify their facilities, including by changing transmitter sites, was more limited than non-short-spaced stations. After the Commission adopted the rule changes in Docket 80-90, the ability of grandfathered short-spaced stations to modify their facilities was further restrained. In June 1996, the Commission initiated a proceeding to provide grandfathered short-spaced stations with increased flexibility to modify their facilities.[13] Specifically, the Commission proposed rule changes that included the elimination of second and third-adjacent-channel spacing requirements for grandfathered short-spaced stations and revisions to the technical showings these stations must make to modify their facilities.

In adopting rule revisions to provide increased flexibility for these stations, the Commission once again stressed the importance of maintaining the technical integrity of the FM band by preventing the potential for increased interference. It explained: "The rules adopted in this Order permit the utmost in flexibility for this class of grandfathered FM stations while

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10 *Modification of FM Broadcast Station Rules to Increase the Availability of Commercial FM Broadcast Assignments*, 94 FCC 2d 152 (1983).

11 *Id.* at 170.

12 *Id.* at 175.

13 *Grandfathered Short-Spaced FM Stations*, Notice of Proposed Rulemaking, 11 FCC Rcd 7245 (1996).

maintaining the technical integrity of the FM band by preventing increased interference."[14] The Commission very clearly stated that it was only willing to provide relaxed spacing standards for a specific (and relatively small) group of licensees facing unique circumstances: "We believe that the current rules should be changed to allow for sufficient flexibility when co-channel and first-adjacent channel grandfathered stations seek to relocate. However, providing this flexibility should not jeopardize another station's ability to serve its listeners."[15] The Commission also stated that: "Our underlying presumption is that any increase in total interference, caused and received, is not in the public interest. Interference caused and interference received are opposite sides of the same coin. Both represent inefficient use of the spectrum."[16] For this reason, the Commission decided only to permit an increase in interference received if offset by a decrease in interference caused.[17]

Moreover, the Commission specifically rejected the suggestion that it permit slight increases in interference caused when a net reduction in interference occurs, emphasizing that "subjecting other grandfathered stations to an increase in interference, without offsetting factors, would be unfair."[18] The Commission further explained that "[a]llowing stations to increase interference caused would result in diminished service areas, and promote perpetual degradation of the overall quality of FM service."[19]

Further, in relaxing second and third-adjacent-channel spacing requirements for grandfathered short-spaced stations, the Commission made very clear that the ruling was not in any way intended to compromise the sanctity of the mileage separation system. "[W]e have no intention of relaxing second-adjacent-channel and third-adjacent-channel spacing requirements as allotment and assignment criteria for any group except pre-1964 grandfathered stations."[20] In the low power FM proceeding, however, the Commission has proposed to do just what it said it would not -- eliminate second and third-adjacent-channel spacing requirements as an allotment

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14 *Grandfathered Short-Spaced FM Stations*, Report and Order, 12 FCC Rcd 11840 (1997).

15 *Id.* at 11844.

16 *Id.* at 11846.

17 *Id.*

18 *Id.* at 11846.

19 *Id.* (emphasis added).

20 *Id.* at 11849.

criteria for all stations. This action would directly contravene decades of precedent in which the Commission has steadfastly refused to do so and be squarely inconsistent with the strict standard the Commission has applied in scores of cases involving requests from individual stations for waivers of the minimum spacing requirements set forth in Section 73.207.

III. Because of The Importance Of The FM Allocations Scheme, The Commission Applied A Very Strict Standard In Considering Requests For Waivers Of Section 73.207.

A. Waiver Applicants Were Required To Comply With A Three Part Test, Including Demonstrating That A Waiver Would Serve The Public Interest.

In keeping with the importance placed on the FM allotment system, the Commission over the years has utilized a very strict standard in determining whether to grant waivers of the mileage separation requirements. The Commission has consistently acknowledged "that strict enforcement of the mileage distance separation rules is of particular importance to the integrity of the entire FM allocation plan."[21]

Significantly, in previous specific cases the Commission has **rejected** as a basis for short-spacing waivers at the allocation stage the precise public interest justification advanced to support the proposal to create a low power FM service -- that an increase in programming diversity would occur. In *Bristol, Tennessee*, the Commission refused to grant a short-spacing waiver to an applicant that proposed to operate a minority oriented radio station.[22] The Commission explained that the reason for the heavy burden placed on applicants seeking short-spacing waivers "is the great emphasis we place on the sanctity of the Table of Assignments which is based on a mileage separation scheme. In this manner, we have been able to provide a consistent, reliable and efficient system of allocating FM channels. Following this approach, we have yet to grant a short-spaced assignment."[23] In *Denver, Colorado*, the Commission concluded that the increased interference that would result from a proposed application outweighed benefits of increased programming diversity that could be provided by a minority-

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21 *Decatur, Texas*, 40 RR 2d 470, 472 (Brdcst. Bur., 1977); *See also, Lake Geneva Wisconsin*, 9 FCC 2d 20, 21 (1967) (Petitioner "failed to show extraordinary circumstances or public interest considerations of sufficient weight to overcome the presumption in favor of strict enforcement of the mileage separation rules, which are the cornerstone of the entire FM assignment structure").

22 46 RR 2d 650 (Pol. and Rules Div., 1979).

23 *Id.* at 651.

owned station.[24] The Commission observed that although the need for a minority station in Denver was "no doubt genuine, it [fell] short of the justification for waiver of the magnitude of short-spacing rules involved here."[25]

However, until 1989 when it adopted Section 73.215 of the rules, the Commission would consider requests from individual stations to waive the minimum separation requirements. Such waivers were granted quite sparingly. Applicants for Section 73.207 waivers were required to satisfy a three part test, to which the Commission adhered strictly.[26] Under this test, an applicant had to demonstrate that its existing site was unsuitable; that there were no fully-spaced sites available; and that granting the waiver would further the public interest.[27]

In *Edens Broadcasting, Inc.*, the Commission denied a station's request for a waiver of Section 73.207 to relocate its transmitter to a site that was short-spaced by 3.74 miles because the applicant failed to demonstrate the lack of availability of fully-spaced sites.[28] The Commission was unwilling to ignore this threshold requirement even though the relocation would have resulted in the first aural service to certain areas.[29] Similarly, in *North Texas Media Inc. v. FCC,* the U.S. Court of Appeals for the D. C. Circuit upheld the Commission's decision to deny a waiver application on the basis of the failure of the applicant to prove that no non-short-spaced sites were available, despite the fact that the transmitter relocation would have resulted in

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[24] 46 RR 2d 1379 (Pol. and Rules Div., 1980).

[25] *Id.* at 1380. *See also, Universal Broadcasting of Indiana*, 102 FCC 2d 1457, 1459 (1986) (The Commission refused to grant a waiver of Section 73.207 to allow facilities modifications which would have resulted in increases in minority-oriented programming when area to be served was neither unserved nor underserved stating that waiver of spacing requirements on the basis of non-technical considerations "would tend to undermine the allocations system as a whole").

[26] The Commission employed a slightly different standard when analyzing applications for waiver of the minimum separation standard that were considered *de minimis* (*i.e.*, less than one mile). Even in *de minimis* cases, however, the Commission was typically reluctant to grant such waivers.

[27] *Edens Broadcasting, Inc.*, 2 FCC Rcd 689, 693 (Rev. Bd., 1987).

[28] *Id.* at 696.

[29] *Id.* at 694.

the first local service to the community.[30] The Commission also routinely denied applications for waiver of Section 73.207 of the rules when other applications proposing a fully-spaced site existed.[31]

Even when an applicant had met the threshold standards described above, the Commission would only grant a short-spacing waiver if it concluded that the public interest would be served. Typically, this public interest showing was satisfied only by applicants facing unusual or unique circumstances. For example, in *Stearns County Broadcasting Company*, the Commission denied a waiver for a two-mile short-spacing on the grounds that the applicant had not demonstrated with particularity the facts and circumstances which would warrant such action, and failed to provide affirmative reasons to justify a grant of the waiver in the public interest.[32]

The Commission has been extremely reluctant to grant waivers of the minimum spacing requirements that would result in the creation of additional interference. For example, in *Sandy Springs, Georgia*, the Commission explained that any increase in interference is a significant detriment to the public interest: "The waiver, while eliminating one short spacing and reducing another, could create significant additional radio interference for populations and in geographical areas not currently experiencing interference."[33]

In denying a waiver in *Carroll-Harrison Broadcasting, Inc.*, the Commission emphasized that "it is important to maintain the integrity of the entire FM plan by strict adherence to separation requirements in the interest of fairness and efficiency, except in extra-ordinary circumstances."[34] Indeed, even the benefits of improved coverage will outweigh the Commission's substantial concern for interference only when existing coverage is deemed inadequate.[35]

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30 778 F. 2d 28, 33 (D.C. Cir. 1985).

31 *See, e.g., Donovan Burke*, 104 FCC 2d 843, 845 (1986); *Trend Broadcasting, Inc.*, 18 FCC 2d 749 (1969).

32 71 FCC 2d 412 (1979).

33 6 FCC Rcd 6580, 6587 (MMB, 1991).

34 67 FCC 2d 254, 255 (1977).

35 *See, e.g., Musicast of the South, Inc.*, 45 RR 2d 1213, 1214 (Brdcst. Bur., 1979); *Universal Broadcasting of Indiana, Inc.*, at 1459 ("improved coverage may warrant an increased risk of interference only when existing coverage of the community is patently inadequate."); *See* (continued...)

In *In re Application of Greater Media Radio Company, Inc.*, the Commission denied an Application for Review that challenged the Mass Media Bureau's action denying an application for a construction permit and related short-spacing waiver requests. In its Memorandum Opinion and Order, the Commission stated that "[t]he spacing rules were put into force as the best means for achieving an orderly, efficient, and effective development of the commercial FM broadcast service"[36] and emphasized that "[t]he Commission has long held that strict enforcement of the mileage separation rules is of paramount importance to the integrity of the entire FM assignment plan."[37]

B. The Commission Granted Waivers Of The Mileage Separation Requirements Only Rarely When Unique Circumstances Existed.

The cases in which the Commission concluded that a waiver of the spacing requirements would advance the public interest are rare and involve unique and unusual circumstances. Examples include the provision of a first local FM service to a community or first nighttime aural service to a significant population.[38]

Concerns regarding the safety of a surrounding area were also a factor in the

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[35](...continued)
also, Stoner Broadcasting System, Inc., 49 FCC 2d 1011, 1012 (1974) ("[A] mere increase in population served is not sufficient to warrant waiver when the area is presently neither unserved nor underserved"); *Greater Media, Inc.*, 59 FCC 2d 796, 797 (1976) (Waiver of the mileage separation rule to accommodate a nine-mile short-spacing is not warranted where the sole justification offered in support is an improvement in coverage).

[36] *In re Application of Greater Media Radio Company, Inc.*, FCC 99-226 at para. 9 (released October 1, 1999).

[37] *Id.*

[38] *See, e.g., Naguabo Broadcasting Company*, 6 FCC Rcd 912, 914 (Rev. Bd., 1991) (Upholding the ALJ's grant of waivers where such grants will permit the establishment of a first local outlet); *Patterson Broadcasting Company*, 45 RR 2d 120, 121 (Brdcst. Bur., 1979) (Granting a waiver where the proposal would result in the first local transmission service); *Radio Station WKDO,* 37 RR 2d 1485, 1486 (Brdcst. Bur., 1976) (Granting a waiver where the proposal would result in first FM service); *Ashdown Broadcasters, Inc.*, 36 RR 2d 1669, 1670 (Brdcst. Bur., 1976) (Waiver granted to permit introduction of first local service); *Fort Myers Broadcasting Company*, 77 FCC 2d 863, 866 (1980) (Waiver warranted where the provision of a first aural nighttime service to a significant population outweighs the negative aspect of three mile short-spacing).

granting of minimum separation requirement waivers. In *Tri-Valley Broadcasting Company,* the Commission granted a waiver because the proposed FM service would provide first local service for a community and the service would provide crucial emergency alert communications in light of the community's close proximity to a nuclear power plant.[39]

In *The Baltimore Radio Show, Inc.,* the applicant was requesting a permit to construct a station that was short-spaced to two first-adjacent-channel stations (each less than one mile.) The Commission concluded that the short-spacing was not only *de minimis*, but also that the short-spacing would decrease the proximity of the transmitter to state and federal wildlife areas, thus advancing an important public interest.[40]

Finally, the Commission granted waivers of Section 73.207 when the short-spaced site would actually reduce the level of interference to another station. In *Bristol Broadcasting Co., Inc.,* the Commission approved the station's relocation of its transmitter site and concluded that granting the waiver would not undermine the mileage separation system because the applicant would provide more protection to the service area of another station from the short-spaced site than it would from the fully-spaced site.[41]

The Commission discontinued granting waivers of Section 73.207 in 1989 at the time it adopted Section 73.215 of the rules.[42] Under this rule, individual applicants are permitted to utilize directional antennas in order to operate at short-spaced sites if doing so will not result in prohibited interference to other stations.[43] In explaining the adoption of this rule, the Commission reaffirmed the continued primacy of the current FM allotment scheme, stating that "we viewed the policy of waiving Section 73.207, even if only to permit short-spacing of a mile, as undesirable because it undermines, at least to some extent, the effectiveness of the distance separation table."[44]

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39 4 FCC Rcd 4711 (1989).

40 3 FCC Rcd 169 (Rev. Bd., 1988).

41 *Id.* at 14.

42 *Amendment of Part 73 of the Commission's Rules to Permit Short-Spaced FM Station Assignments by Using Directional Antennas*, Report and Order, 4 FCC Rcd 1681, 1685 (1989) *("Report and Order").*

43 *Report and Order* at 1681.

44 *Amendment of Part 73 of the Commission's Rules to Permit Short-Spaced FM*

(continued...)

The adoption of Section 73.215 did not indicate a shift in the Commission's FM allotment rules. Rather, the Commission declared that "[w]ith respect to the impact of contour protection on our general allotment rules, we have held throughout this proceeding that no change has been made or will be made in the FM channel allotment process."[45] In adopting the rule, the Commission declared that the purpose of Section 73.215 was merely to grant increased flexibility to licensees in determining where to locate their transmitters, not to alter the FM channel allotment process.[46] All applicants requesting channel allotments are still required to comply with the minimum distance separation standards established under Section 73.207.[47] The Commission recently reaffirmed this commitment in its technical streamlining notice of proposed rulemaking. Specifically, the Commission explained: "Section 73.215 codifies a relief mechanism for applicants to specify sub-standard spacings *provided that certain criteria are met.* If an applicant cannot meet these standards, then Section 73.207 requirements must control. In fact, the Commission's interest in adhering to Section 73.207 minimum distance separations is all the more compelling because Section 73.215 has given applicants additional site selection flexibility."[48]

IV. Conclusion

As the foregoing makes clear, over the past thirty-five years, the Commission has been exceptionally consistent in protecting the FM mileage distance separation rules, and acknowledging their importance for maintaining the technical integrity and superiority of the FM service. Because of the Commission's longstanding and consistent willingness to adhere to this commitment, both in the modification and allotment process, the technical integrity of the FM service has been maintained. The proposals advanced in the subject NPRM represent a radical,

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[44](...continued)
Station Assignments by Using Directional Antennas, Memorandum Opinion and Order, 6 FCC Rcd 5356, 5360 (1991) *("MO&O").*

[45] *MO&O*, at 5358.

[46] *Report and Order*, at 1684.

[47] *MO&O*, at 5358.

[48] *1998 Biennial Regulatory Review -- Streamlining of Radio Technical Rules in Parts 73 and 74 of the Commission's Rules*, Notice of Proposed Rulemaking and Order, MM Docket No. 98-93 (released June 15, 1998) at Ft. 25 (emphasis in the original).

and ill-advised departure from this approach, and would undermine the Commission's 35 year effort to avoid degradation of FM technical service.